

IN THE CLAIMS

1. (Currently Amended) An imaging system having spatial resolution enhancement comprising:

(a) means a multispectral imager having four synchronized monochromatic cameras for providing multispectral bands of images;

(b) said multispectral imager comprises a narrow band interference filter in front of each of said four synchronized monochromatic cameras, each interference filter being different comprising a spectral band within the spectral ranges covering blue, green, red, and near infrared;

(c) a computer system connected to an output of each of said multispectral bands of images four synchronized cameras of said multispectral imager for receiving said multispectral bands of spectral images and performing resolution enhancement;

(d) means within said computer system for resampling-up each of said multispectral bands of spectral images using neighbor average interpolation;

(e) means for storing said resampled-up multispectral bands of images for digital processing; and

(f) means for performing fine pitch shifting on said multispectral band-to-band pixel registration of said resampled-up images to obtain more accurate band-to-band registration.

2. (Currently Amended) The imaging system as recited in Claim 1 wherein said computer system comprises a memory for storing said resampled-up, registered images.

3. (Canceled)

4. (Currently Amended) The imaging system of Claim [[3]] 1 wherein each of said ~~plurality of~~ synchronized monochromatic cameras comprises an interline transfer, black and white, progressive scan, CCD video ~~cameras~~ camera.

5. (Currently Amended) The imaging system as recited in Claim [[3]] 1 wherein each of said ~~plurality of~~ synchronized monochromatic cameras comprises 782 x 576 square pixels.

6. (Currently Amended) The imaging system as recited in Claim [[3]] 1 wherein said ~~plurality of~~ synchronized monochromatic cameras are optically aligned with a fractional pixel offset to each other.

Claims 7-9. (Canceled)

10. (Currently Amended) The imaging system as recited in Claim 1 wherein said computer system comprises means for acquiring a bracket of computer controlled multiple exposures of said multispectral bands of images for extending dynamic range.

Claims 11-40. (Canceled)